

Multi PMT Test System Construction Plan

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M-PMT test system Construction

Motivation

-> **PMT** (used for Neutron detector construction in Se-Jong) **gain test**

Focusing Point

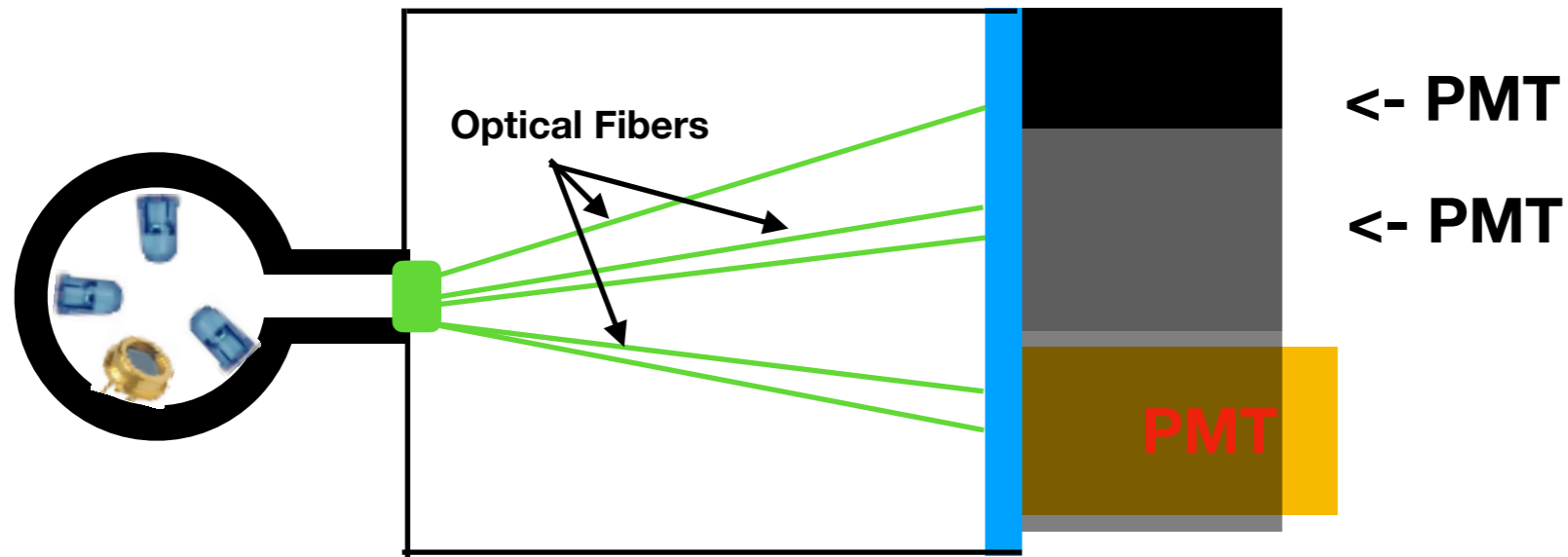
-> Use Optical Fiber to test $4N+1$ PMT at once

-> Focus on fast PMT change and easy form

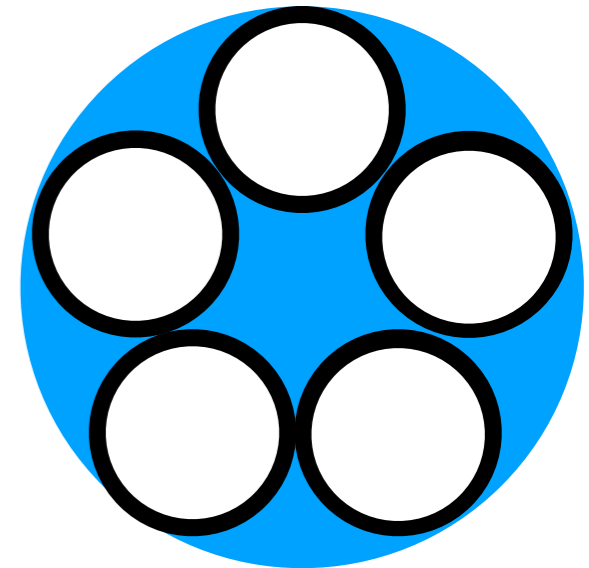
-> For same light intensity, each optical fiber has same length

Simple Cartoon

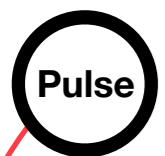
Side View



Front View

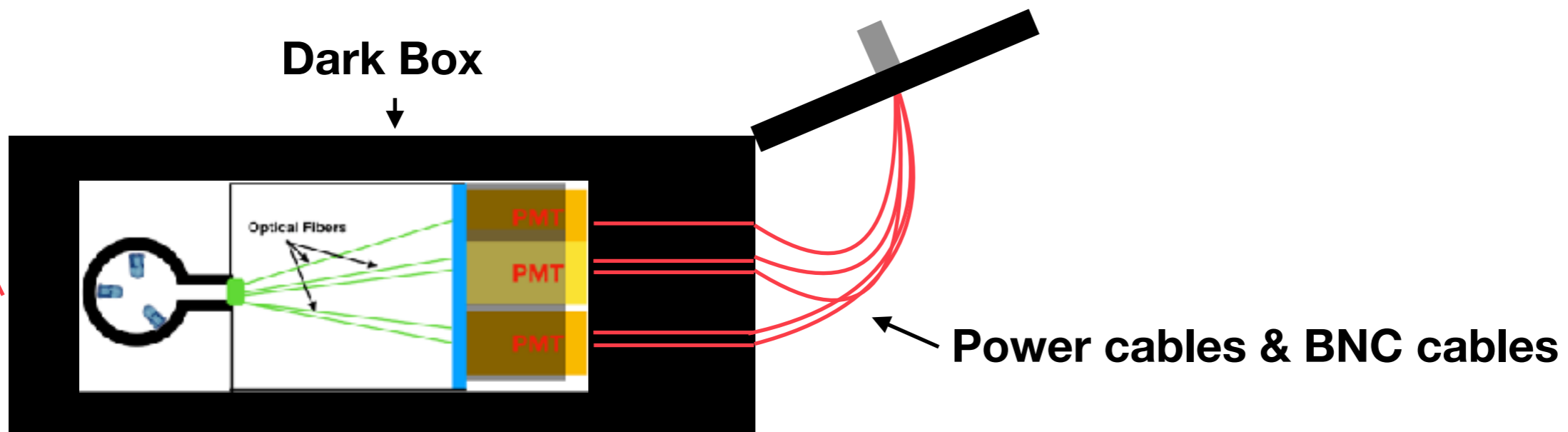


4N+1 Hole



Constant Current Source

Dark Box

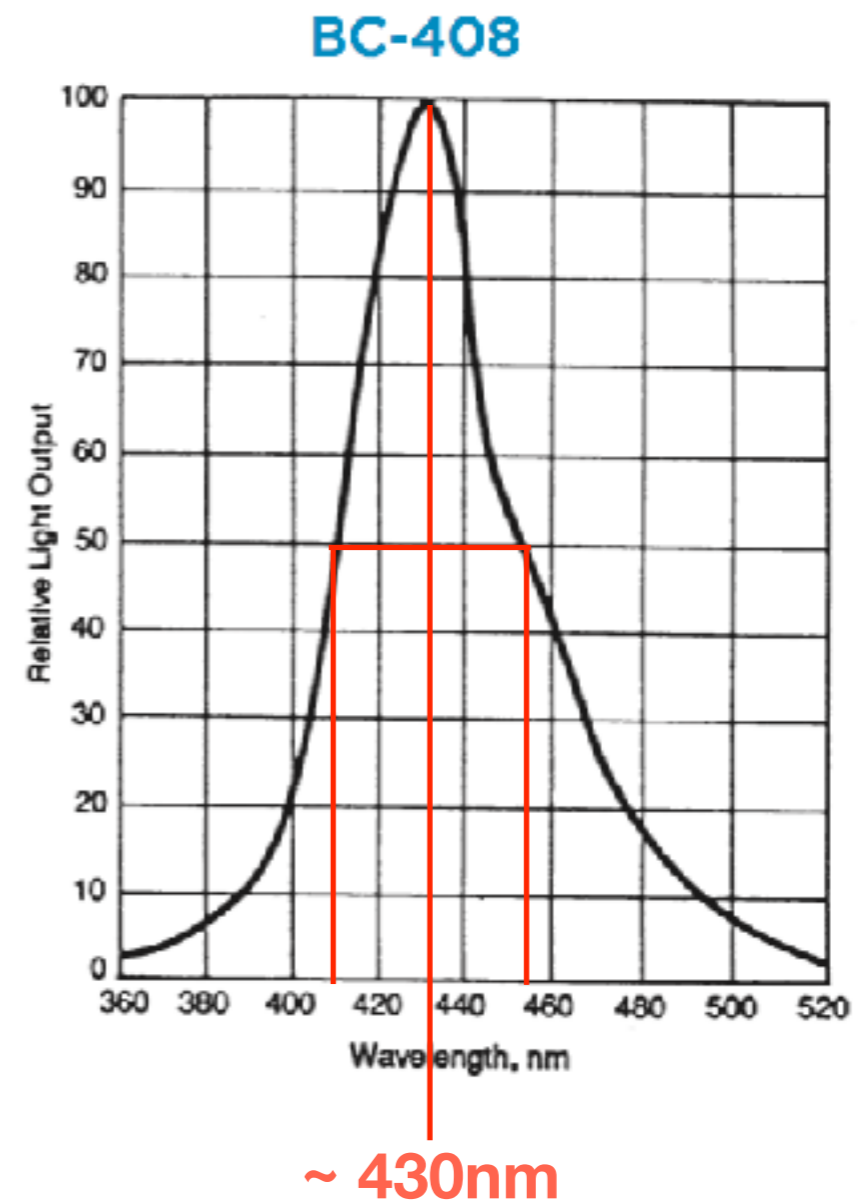


Selected LED

Detector material : BC-408

	BC-408
Radiation Detected	
<100keV X-rays	X
100keV to 5MeV gamma rays	
>5MeV gamma rays	
Fast neutrons	
Alphas, betas	X
Charged particles, cosmic rays, muons, protons, etc.	X
Principal Uses/Applications	TOF large area
Scintillation Properties	
Light Output, %Anthracene	64
Rise Time, ns	0.9
Decay Time (ns)	2.1
Pulse Width, FWHM, ns	-2.5
Wavelength of Max. Emission, nm	425
Light Attenuation Length, cm*	210
Bulk Light Attenuation Length, cm	380
Atomic Composition	
No. H Atoms per cc ($\times 10^{23}$)	5.23
No. C Atoms per cc ($\times 10^{23}$)	4.74
Ratio H:C Atoms	1.104
No. of Electrons per cc ($\times 10^{23}$)	3.37

Emission Spectra



Two kind of 430nm LED



exotic hyper violet led - 430nm

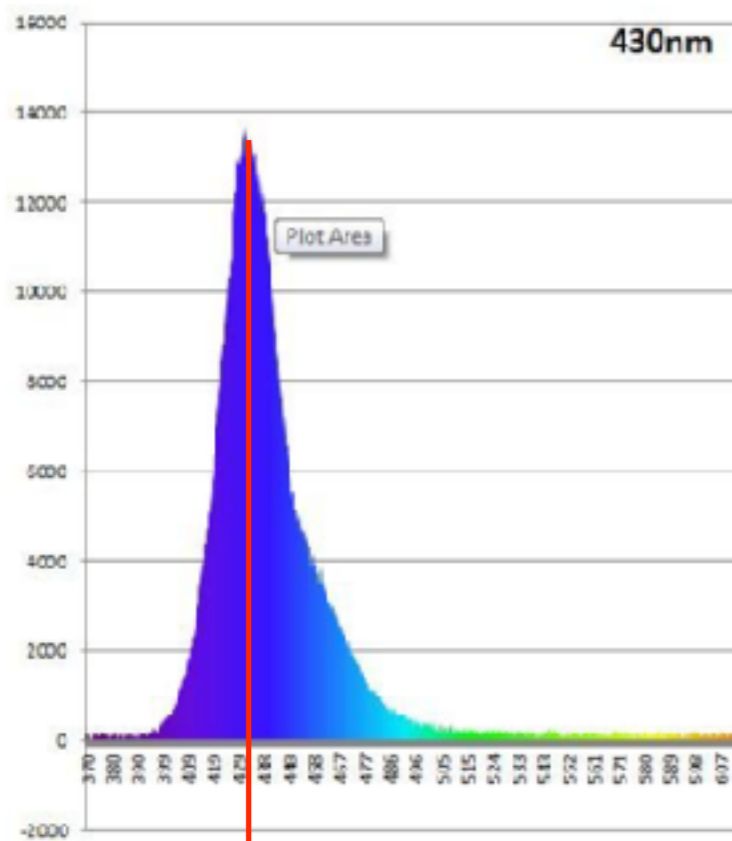
brand: Exotic
 weight: 0.01 Ounces
 shipping: Calculated at checkout
 quantity in package: 1 Pack
 price: \$4.50

L-934MBDL - LED, Low Power, Blue, Through Hole, T-1 (3mm), 20 mA, 3.8 V, 430 nm

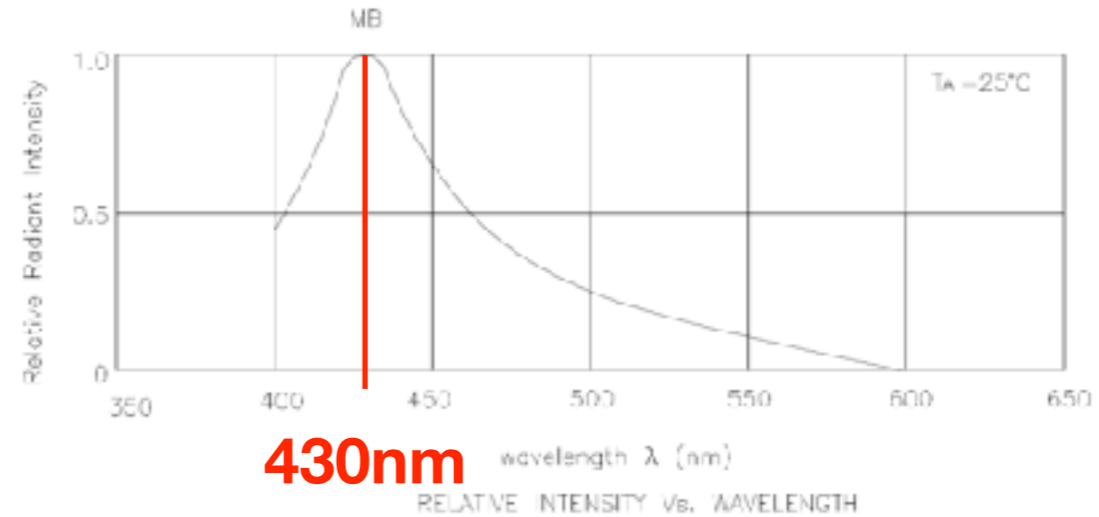


Kingbright

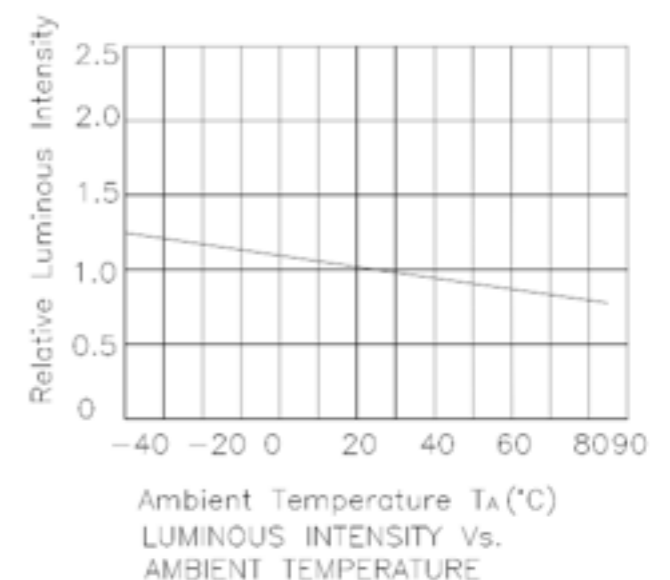
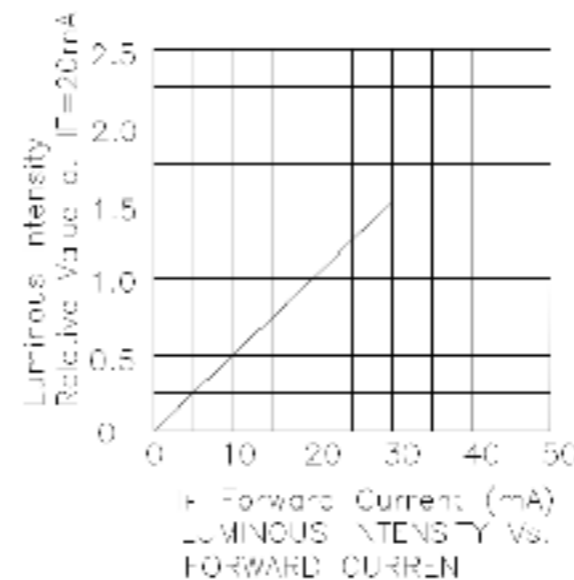
제조사: KINGBRIGHT
 제조업체 부품 번호: L-934MBDL
 주문 참조 번호: 1142491
 기술 데이터 시트: (EN)
 모든 기술 문서 보기



430nm



430nm



Light intensity : 880mW -960mW

-> Too Powerful !

Future Plans

- Buy proper **Optical fiber** to our test
- Draw much more detail blueprint using **Inventor**
- Find good company to make the system